



A.D. 1871, 20th JULY.

N° 1897.

SPECIFICATION

OF

FERRAR FENTON.

TREATING SEWAGE, &c.

LONDON:

PRINTED BY GEORGE E. EYRE AND WILLIAM SPOTTISWOODE,

PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY:

PUBLISHED AT THE GREAT SEAL PATENT OFFICE,

25, SOUTHAMPTON BUILDINGS, HOLBORN.

Price 3d.

1872.



A.D. 1871, 20th JULY. N° 1897.

Treating Sewage, &c.

LETTERS PATENT to Ferrar Fenton, of Dewsbury, in the County of York, for the Invention of "IMPROVEMENTS IN THE PURIFICATION AND UTILIZATION OF SEWAGE AND OTHER REFUSE MATTERS WHETHER IN A LIQUID, SEMI-FLUID, OR SOLID STATE, AND IN THE EXTRACTION OR PRODUCTION THEREFROM OF 'MAGMA,' 'SEAK,' GREASE, SOAP, TALLOW, OR OIL."

Sealed the 3rd October 1871, and dated the 20th July 1871.

PROVISIONAL SPECIFICATION left by the said Ferrar Fenton at the Office of the Commissioners of Patents, with his Petition, on the 20th July 1871.

I, FERRAR FENTON, of Dewsbury, in the County of York, do hereby
5 declare the nature of the said Invention for "IMPROVEMENTS IN THE PURIFICATION AND UTILIZATION OF SEWAGE AND OTHER REFUSE MATTERS, WHETHER IN A LIQUID, SEMI-FLUID, OR SOLID STATE, AND IN THE EXTRACTION OR PRODUCTION THEREFROM OF 'MAGMA,' 'SEAK,' GREASE, SOAP, TALLOW, OR OIL," to be as follows:—

10 This Invention relates principally to the purification, treatment, and utilization of sewage and other refuse matters, whether in a liquid, semi-fluid, or solid state, and to the production therefrom of various marketable commodities herein-after mentioned, part of the Invention

Fenton's Improvements in the Purification and Utilization of Sewage, &c.

being also applicable for the extraction of grease, "magma," or "seak" from the spent liquors or sewage of woollen mills, bleach or silk works or other factories, wash houses, wool or sheep washing mills or pools.

The Invention also relates to the making of soap direct from such grease, "magma," or "seak" and is partly an improvement upon the 5 subject matter of Letters Patent granted to me and Samuel Hollins, of Bolton, in the County of Lancaster, and dated 21st September 1870, No. 2534.

In addition to the processes or modes of treating sewage or factory or other waste waters described in the Specification of the Letters Patent 10 above referred to, I propose to use aëration to quicken and perfect the precipitation of the polluting matters whether in suspension or solution by passing through, into, under, or upon the sewage (either mixed with any of the compositions described in the said Specification or otherwise) a current or blast of atmospheric air, such current or blast being pro- 15 duced by any convenient mechanical means, and I also propose to apply the same for the extraction of "magma," "seak," or grease from suds or other waters in which they may be contained, in conjunction with the processes described in the Specification above referred to.

After the extraction of the "magma," "seak," or grease from any 20 waters containing them by the processes described in the Specification before named or above, or by soda or salts of soda, potash, or salts of potash, with lime, or a solution of them or any of them, or by a solution of the compositions mentioned in the said Specification, I propose to use the same for the manufacture of soap by any ordinary or well 25 known process of soap making direct, without the necessity of first extracting or pressing out the pure grease from such "magma," "seak," or grease (as hitherto practised) either with or without an admixture of fresh grease, tallow, fat, or oil thereto, and also to use "magma," "seak," or grease which has been obtained from such waters or refuse 30 by the common process of extraction by the use of acids or acid salts for the manufacture of soap direct, either with or without the admixture of fresh grease, tallow, or oil, such acid magma, seak, or grease merely requiring a longer boiling and a stronger alkali to effect the saponification than is required by the ordinary process, and I further propose 35 to use the "magma," "seak," or grease extracted from sewage or suds by the processes described in the said Specification of the Letters Patent No. 2534/70, or as above, after acidulation, as substances for the pro-

Fenton's Improvements in the Purification and Utilization of Sewage, &c.

duction of grease, tallow, oil, and stearine, by any of the ordinary and well-known processes, and such other matters or substances procured by the said processes as cannot be utilized for the purposes above described I propose to employ as manures, and in the case of the substances
5 precipitated from acid sewage waters I propose to use them either for manures, or for the manufacture of cements by calcination, or for the manufacture of sulphate of soda, or other salts of soda, or soda, by the ordinary methods of manufacture.

The parts of this Invention claimed as new are as follows :—

10 1. Making soap direct (without pressing or distilling) from the “magma,” “seak,” or grease extracted by means of a compound alkali as described in the Specification of the former Letters Patent previously alluded to, either with or without the addition of fresh grease or oil.

2. Making “magma,” “seak,” or grease extracted by acid in the
15 ordinary way, into soap direct (without first pressing or distilling) by washing or treating it with the compound alkali above referred to.

3. Driving a current of hot or cold air through or over the suds or sewage containing the “magma,” “seak,” or grease so as to secure the oxidation thereof and effect the more rapid and perfect purification of
20 such suds or sewage.

4. Obtaining free oil by pressure from magma, seak, or grease extracted by the alkaline process above referred to by previously treating such alkaline “magma,” “seak,” or grease, with an acid.

SPECIFICATION in pursuance of the conditions of the Letters Patent,
25 filed by the said Ferrar Fenton in the Great Seal Patent Office on the 18th January 1872.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, FERRAR FENTON, of Dewsbury, in the County of York, send greeting.

WHEREAS Her most Excellent Majesty Queen Victoria, by Her
30 Letters Patent, bearing date the Twentieth day of July, in the year of our Lord One thousand eight hundred and seventy-one, in the thirty-fifth year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the said Ferrar Fenton, Her special license that I, the said Ferrar Fenton, my executors, administrators, and assigns,

Fenton's Improvements in the Purification and Utilization of Sewage, &c.

or such others as I, the said Ferrar Fenton, my executors, administrators, and assigns, should at any time agree with, and no others, from time to time and at all times thereafter during the term therein expressed, should and lawfully might make, use, exercise, and vend, within the United Kingdom of Great Britain and Ireland, the Channel Islands, and Isle of Man, an Invention for “IMPROVEMENTS IN THE PURIFICATION AND UTILIZATION OF SEWAGE AND OTHER REFUSE MATTERS, WHETHER IN A LIQUID, SEMI-FLUID, OR SOLID STATE, AND IN THE EXTRACTION OR PRODUCTION THEREFROM OF ‘MAGMA,’ ‘SEAK,’ GREASE, SOAP, TALLOW, OR OIL,” upon the condition (amongst others) that I, the said Ferrar Fenton, my executors or administrators, by an instrument in writing under my, or their, or one of their hands and seals, should particularly describe and ascertain the nature of the said Invention, and in what manner the same was to be performed, and cause the same to be filed in the Great Seal Patent Office within six calendar months next and immediately after the date of the said Letters Patent.

NOW KNOW YE, that I, the said Ferrar Fenton, do hereby declare the nature of the said Invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement (that is to say) :—

The Invention relates principally to the purification, treatment, and utilization of sewage and other refuse matters whether in a liquid, semi-fluid, or solid state, and to the producing therefrom of various marketable commodities herein-after mentioned, part of the Invention being also applicable for the extraction of grease, “magma,” or “seak” from the spent liquors or sewage of woollen mills, bleach or silk works or other factories, washhouses, wool or sheep washing mills or pools.

The Invention also relates to the making of soap direct from such grease, “magma,” or “seak,” and is partly an improvement upon the subject matter of Letters Patent granted to me and Samuel Hollins, of Bolton, in the County of Lancaster, and dated the Twenty-first day of September, A.D. 1870, No. 2534.

In addition to the processes or modes of treating sewage or factory or other waste waters described in the Specification of the Letters Patent above referred to, I propose to use aeration to quicken and perfect the precipitation of the polluting matters whether in suspension or solution by passing through, into, under, or upon the sewage (either

Fenton's Improvements in the Purification and Utilization of Sewage, &c.

mixed with any of the compositions described in the said Specification or otherwise) a current or blast of atmospheric air, such current or blast being produced by any convenient mechanical means, and I also propose to apply the same for the extraction of "magma," "seak," or
5 grease from suds or other waters in which they may be contained in conjunction with the processes described in the Specification above referred to.

After the extraction of the "magma," or "seak," or grease from any waters containing them by the processes described in the Specification
10 before named above, or by soda or salts of soda, potash or salts of potash, with lime or a solution of them or any of them, or by a solution of the compositions mentioned in the said Specification, I propose to use the same for the manufacture of soap by any ordinary or well known process of soap making direct without the necessity of first extracting
15 or pressing out the pure grease from such "magma," "seak," or grease (as hitherto practised) either with or without an admixture of fresh grease, tallow, fat, or oil thereto. I find that it makes a better soap capable of forming a stronger lather if the soda or potash or other alkali used in the soap making is added to the magma, seak, or
20 grease in a dry powdered state, and also by the omission in the soap making process of the salt or lime water usually employed, and the soap is further improved by the use of chlorine in a solid gaseous or liquid solution state to the "magma," "seak," or grease, especially if the same is rendered impure by the intermixture of flocks, wool, hair, or
25 dye matters and maccerating or boiling of the whole together and the after application of alkaline hyposulphates or hyposulphites to destroy the chlorine after it has effected its purpose. And I also use "magma," "seak," or grease which has been obtained from such waters or refuse by the common process of extraction by the use of acids or acid salts
30 for the manufacture of soap direct, either with or without the admixture of fresh grease, tallow, or oil, such acid magma, seak, or grease merely requiring a longer boiling and a stronger alkali to effect the saponification than is required by the ordinary process, and I further propose to use the "magma," "seak," or grease extracted from the sewage or
35 suds by the processes described in the said Specification of the Letters Patent, No. 2534, A.D. 1870, or as above after acidulation as substances for the production of grease, tallow, oil, and stearine by any of the ordinary and well known processes, and such other matters or substances procured by the same processes as cannot be utilized for the purpose

Fenton's Improvements in the Purification and Utilization of Sewage, &c.

above described I propose to employ as manures, and in the case of the substances precipitated from acid sewage waters I propose to use them either for manure or for the manufacture of cements by calcination or for the manufacture of sulphate of soda or other salts of soda or soda by the ordinary methods of manufacture. 5

Having now described the nature and object of my said Invention for "Improvements in the Purification and Utilization of Sewage and other Refuse Matters whether in a Liquid, Semi-fluid, or Solid State, and in the Extraction or Production therefrom of 'Magma,' 'Seak,' Grease, Soap, Tallow, or Oil," together with the manner in which the same is to be or may be performed or carried into practical effect I wish it to be understood that I claim as my Invention,— 10

Firstly. Making soap direct (without pressing or distilling) from the "magma," "seak," or grease extracted by means of a compound alkali as described in the Specification of the former Letters Patent previously alluded to or as above described and either with or without the addition of fresh grease or oil. 15

Secondly. Making "magma," "seak," or grease extracted by acid in the ordinary way into soap direct (without first pressing or distilling) by washing or treating it with the compound alkali above referred to. 20

Thirdly. Driving a current of hot or cold air through or over the suds or sewage containing the "magma," "seak," or grease so as to secure the oxidation thereof, and effect the more rapid and perfect purification of such suds or sewage.

Fourthly. Obtaining free oil by pressure from "magma," "seak," or grease extracted by the alkaline process above referred to by previously treating such alkaline "magma," "seak," or grease with an acid. 25

In witness whereof, I, the said Ferrar Fenton, have hereunto set my hand and seal, this Sixteenth day of January, in the year of our Lord One thousand eight hundred and seventy-two. 30

FERRAR FENTON. (L.S.)

LONDON:

Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty. 1872.

